

Bifacial and other high-efficiency solar modules





Overview

What are bifacial and monofacial solar cells?

Front and rear view of monofacial and bifacial photovoltaic (PV) modules . Bifacial solar cells encased in a glass/backsheet structure provide more power under standard test conditions (STC) than glass/glass PV bifacial modules.

How efficient are bifacial solar cells?

Minor adjustments to cell processing steps have resulted in bifacial solar cells with rear side efficiencies from >60% to over 90% of the front side efficiency. Bifacial cells now come in many varieties (e.g., PERC+, n-PERT, HIT, etc.) and many cell lines have converted to producing bifacial cells.

Why are bifacial photovoltaic cells becoming more popular?

Bifacial photovoltaic cells, modules, and systems are rapidly overtaking the market share of monofacial PV technologies. This is happening due to new cell designs that have replaced opaque, monolithic back surface foil contacts with isolated contacts, which allow light to reach the cell from the rear side.

What are the benefits of bifacial solar panels?

Commercially, there are several benefits in using bifacial solar cells. As discussed earlier, the first will not add any cost to the present monofacial solar cells. Second, the minimized land usage for installing bifacial panels is almost half the surface required for monofacial solar panels.



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Some bifacial modules use a clear or transparent backsheet instead of dual-glass to reduce weight and cost, while still allowing sunlight to reach the rear side of the solar cells. Together, this design forms a high ...

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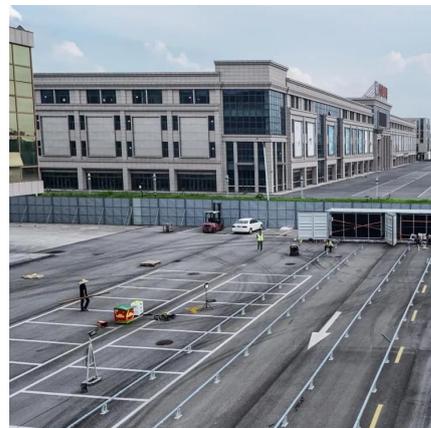
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